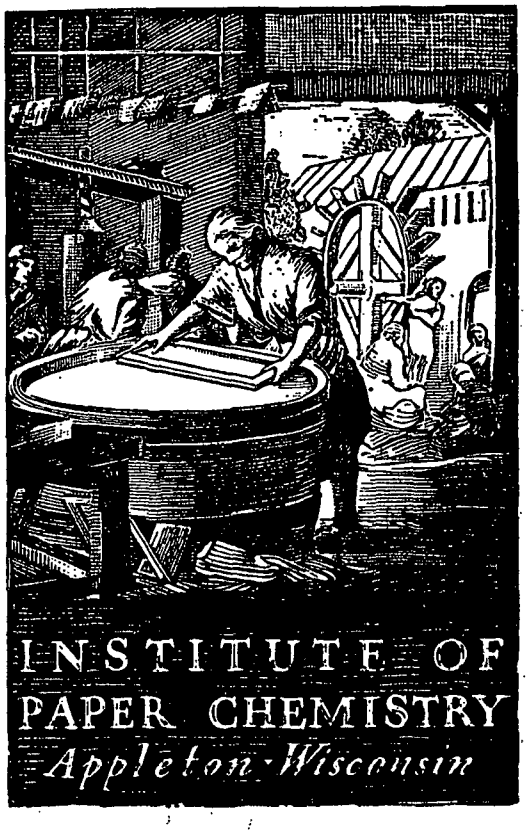

CONTINUOUS BASELINE STUDY

Project 1108-13

Report 174

A Progress Report

to

FOURDRINIER KRAFT BOARD INSTITUTE, INC.

December 1, 1961

THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

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CONTINUOUS BASELINE STUDY

INTRODUCTION

As requested by the Technical Committee of the Fourdrinier Kraft Board Institute, Inc., the reports pertinent to the continuous baseline study on 42-lb. fourdrinier kraft linerboard are now being prepared by The Institute of Paper Chemistry on a bimonthly basis instead of the previous monthly basis. This new system was initiated on August 1, 1961. Hence, this report is the second under the new system and presents results obtained during the months of October and November.

During this second bimonthly period, 82 sample lots of 42-lb. fourdrinier kraft linerboard representing the production of seventeen mills were evaluated in October and 57 sample lots representing the production of fifteen mills were evaluated in November. It may be noted that the number of rolls evaluated during a given month is somewhat lower than has been common during the recent history of this program. The reduction is associated with the revision in the study recommended by the Technical Committee, whereby the maximum number of sample lots submitted for evaluation by each participant was reduced from eight per month to four per month effective September 1, 1961.

PRESENTATION AND DISCUSSION OF TEST RESULTS

Each sample lot received for evaluation during October and November was evaluated for basis weight, caliper, bursting strength, and Elmendorf tearing strength. The average strength results for each mill may be seen in Table I and are graphically presented in Fig. 1 to 5. In addition to a comparison of the current mill averages for the various tests, Table I also shows the current F.K.I. averages, the cumulative F.K.I. averages, and the F.K.I. indexes. For each test, the current mill average represents the average obtained on all sample lots evaluated during a given period, the current F.K.I. average represents the average of the current mill averages, and the cumulative F.K.I. average represents the average of the current F.K.I. averages for the previous twelve months excluding the current period. The F.K.I. index expressed in per cent is the ratio of the current F.K.I. average to the cumulative F.K.I. average.

In Table II, a tabulation of the number of sample lots submitted by each mill during October and November is shown.

Supplementary to the basis weight data given in Table I, a tabulation is given in Table III of the amount by which the basis weight average for each mill varies from the 42-lb. specification set forth in Rule 41.

Shown below from Table I are the maximum and minimum current mill averages for each test and also the current and cumulative F.K.I. averages:

TABLE I

SUMMARY OF COMPOSITE MILL AVERAGES

Mill	Basis Weight, lb.	Caliper, points	Bursting Strength, p.s.i. gage	Elmendorf Tear, g./sheet In Machine	Elmendorf Tear, g./sheet Cross Machine
		October, 1961			
A	42.3	12.9	112	308	336
B	42.4	12.3	121	316	348
C	42.6	12.2	110	362	401
D	42.9	12.2	112	296	357
E	42.8	13.1	110	306	370
F	43.2	12.1	115	305	352
G	43.3	13.8	106	364	410
H	42.8	12.3	112	341	376
I	42.0	12.3	114	279	330
J	42.8	13.2	113	348	380
K	43.2	12.9	116	383	421
L	42.4	13.1	111	323	378
M	42.3	12.8	120	255	326
N	43.7	12.8	105	370	401
O	43.2	13.2	107	323	352
P	No samples submitted.				
Q	No samples submitted.				
S	No samples submitted.				
T	42.7	12.8	112	312	375
U	43.5	12.6	111	320	363
Current FKI Average:	42.8	12.7	112	324	369
Cumulative FKI Average:	43.3	12.6	111	330	372
FKI Index, %	98.8	100.8	100.9	98.2	99.2

TABLE I (Continued)

SUMMARY OF COMPOSITE MILL AVERAGES

Mill	Basis Weight, lb.	Caliper, points	Bursting Strength, p.s.i. gage	Elmendorf Tear, g./sheet In Machine	Elmendorf Tear, g./sheet Cross Machine
		November, 1961			
A	42.1	13.1	114	302	341
B	42.6	12.7	122	311	352
C	42.7	12.1	110	376	394
D	43.3	12.8	107	312	368
E	43.8	12.6	116	305	351
F	43.3	12.2	115	323	348
G	No samples submitted.				
H	42.5	12.1	114	338	356
I	41.8	12.2	117	290	331
J	42.5	13.2	109	324	385
K	No samples submitted.				
L	42.9	13.4	112	347	389
M	42.4	13.2	115	299	343
N	43.9	12.6	106	359	402
O	43.2	12.9	114	317	364
P	No samples submitted.				
Q	No samples submitted.				
S	No samples submitted.				
T	42.6	12.4	117	326	381
U	43.3	12.2	120	335	392
Current FKI Average:	42.9	12.6	114	324	366
Cumulative FKI Average:	43.2	12.6	111	328	371
FKI Index, %	99.3	100.0	102.7	98.8	98.7

TABLE II

NUMBER OF SAMPLE LOTS SUBMITTED BY EACH MILL

Mill Code	Number of Sample Lots October	November
A	4	5
B	4	4
C	4	3
D	12	4
E	3	3
F	6	4
G	3	0
H	2	4
I	8	4
J	8	6
K	2	0
L	4	2
M	2	3
N	7	4
O	4	3
P	0	0
Q	0	0
S	0	0
T	5	4
U	4	4
Total	82	57

TABLE III

PERCENTAGE DEVIATION FROM 42-LB. BASIS WEIGHT SPECIFICATION

Mill Code	October	November
A	+0.7	+0.2
B	+1.0	+1.4
C	+1.4	+1.7
D	+2.1	+3.1
E	+1.9	+4.3
F	+2.9	+3.1
G	+3.1	--
H	+1.9	+1.2
I	0.0	-0.5
J	+1.9	+1.2
K	+2.9	--
L	+1.0	+2.1
M	+0.7	+1.0
N	+4.0	+4.5
O	+2.9	+2.9
P	--	--
Q	--	--
S	--	--
T	+1.7	+1.4
U	+3.6	+3.1

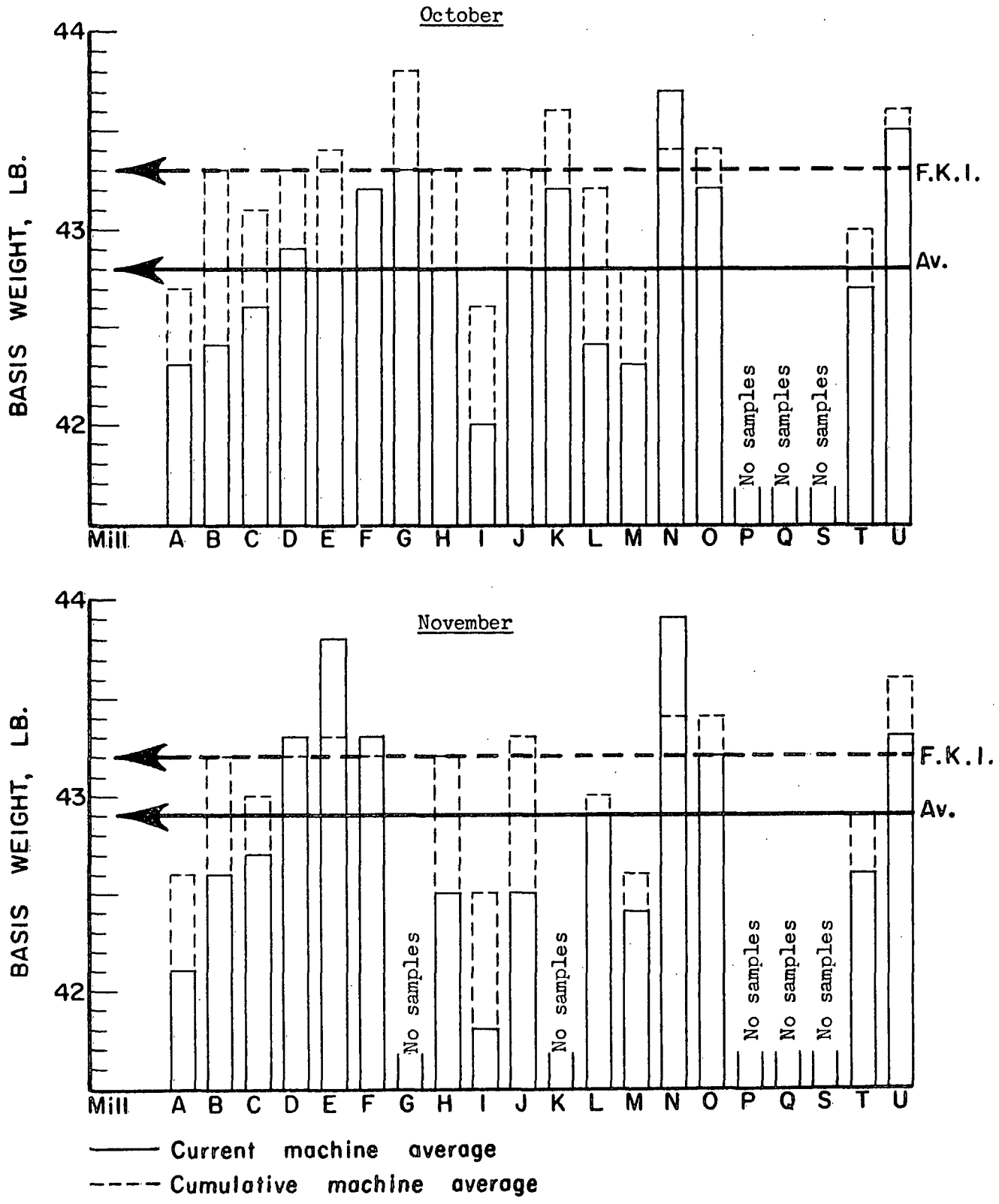

Figure 1. Comparison of Basis Weight Results

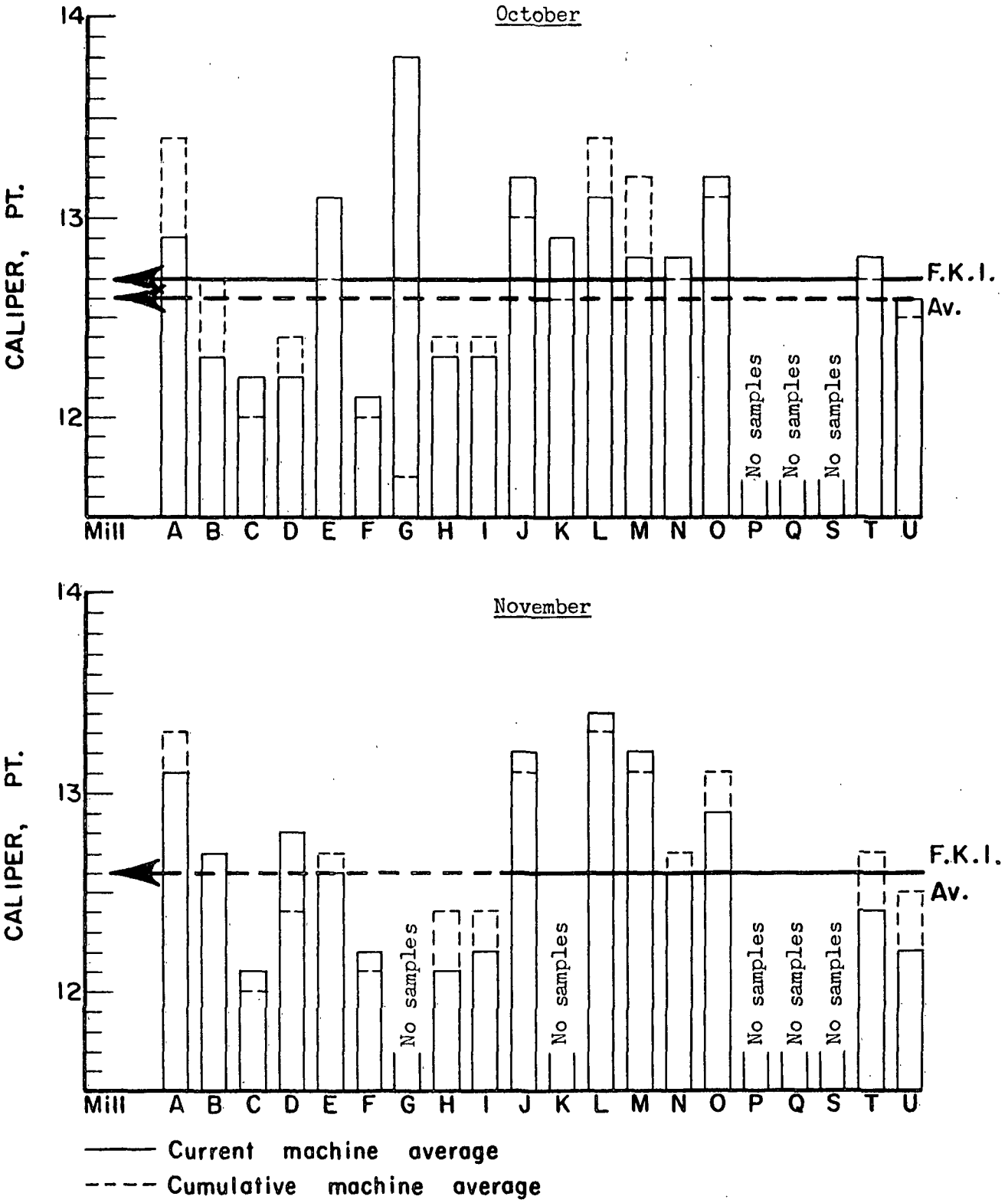

Figure 2. Comparison of Caliper Results

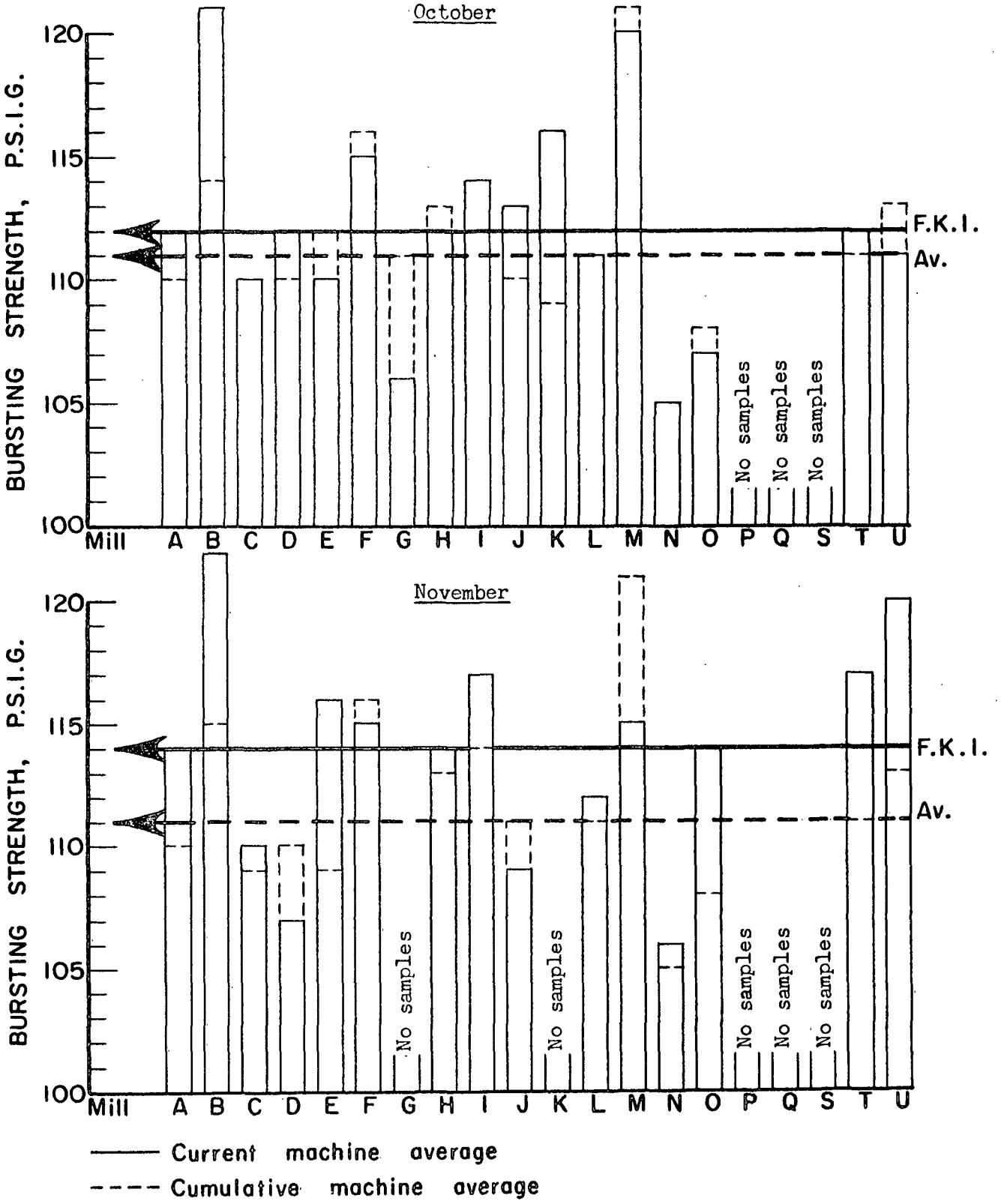

Figure 3. Comparison of Bursting Strength Results

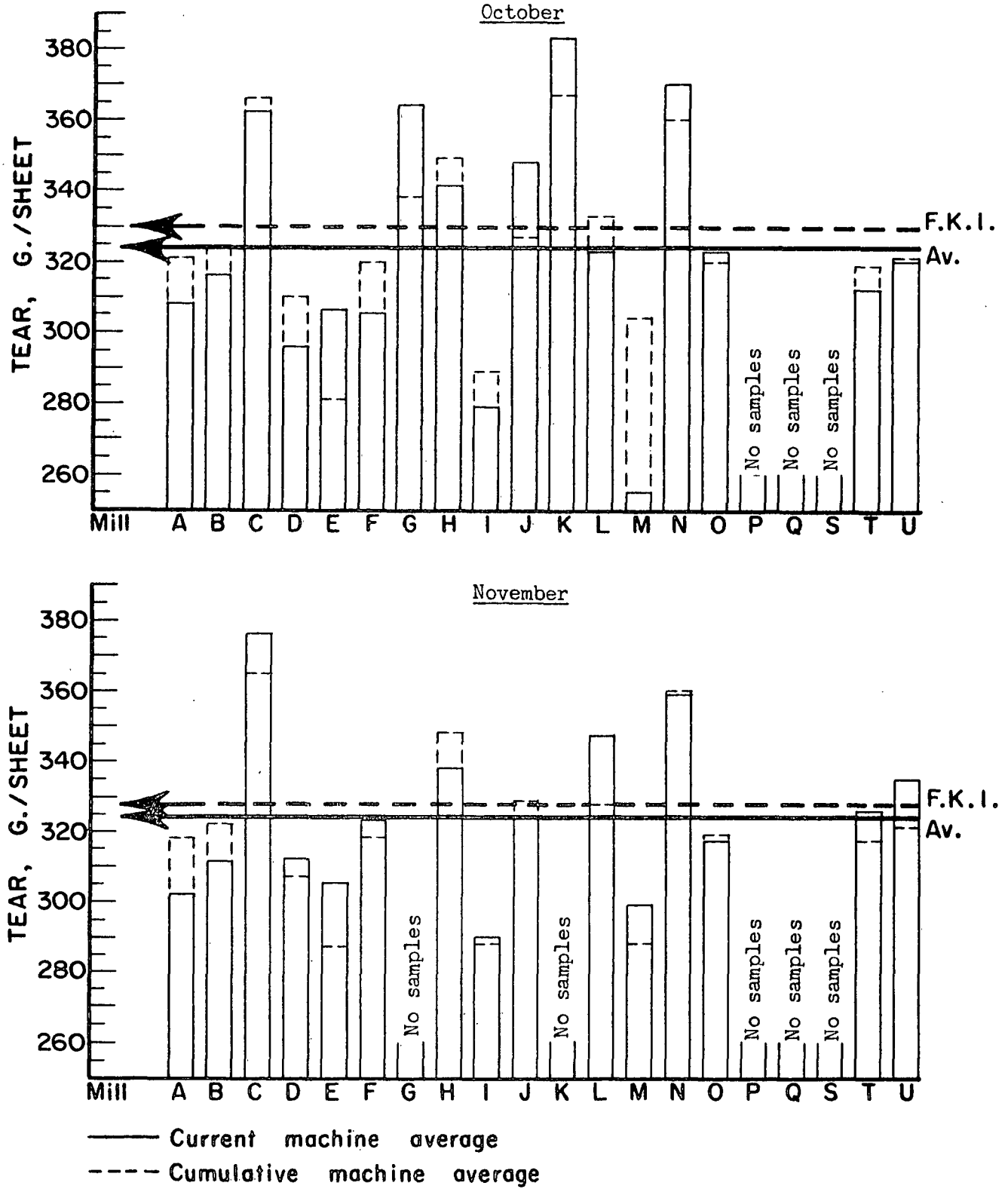

Figure 4. Comparison of Machine-Direction Tear Results

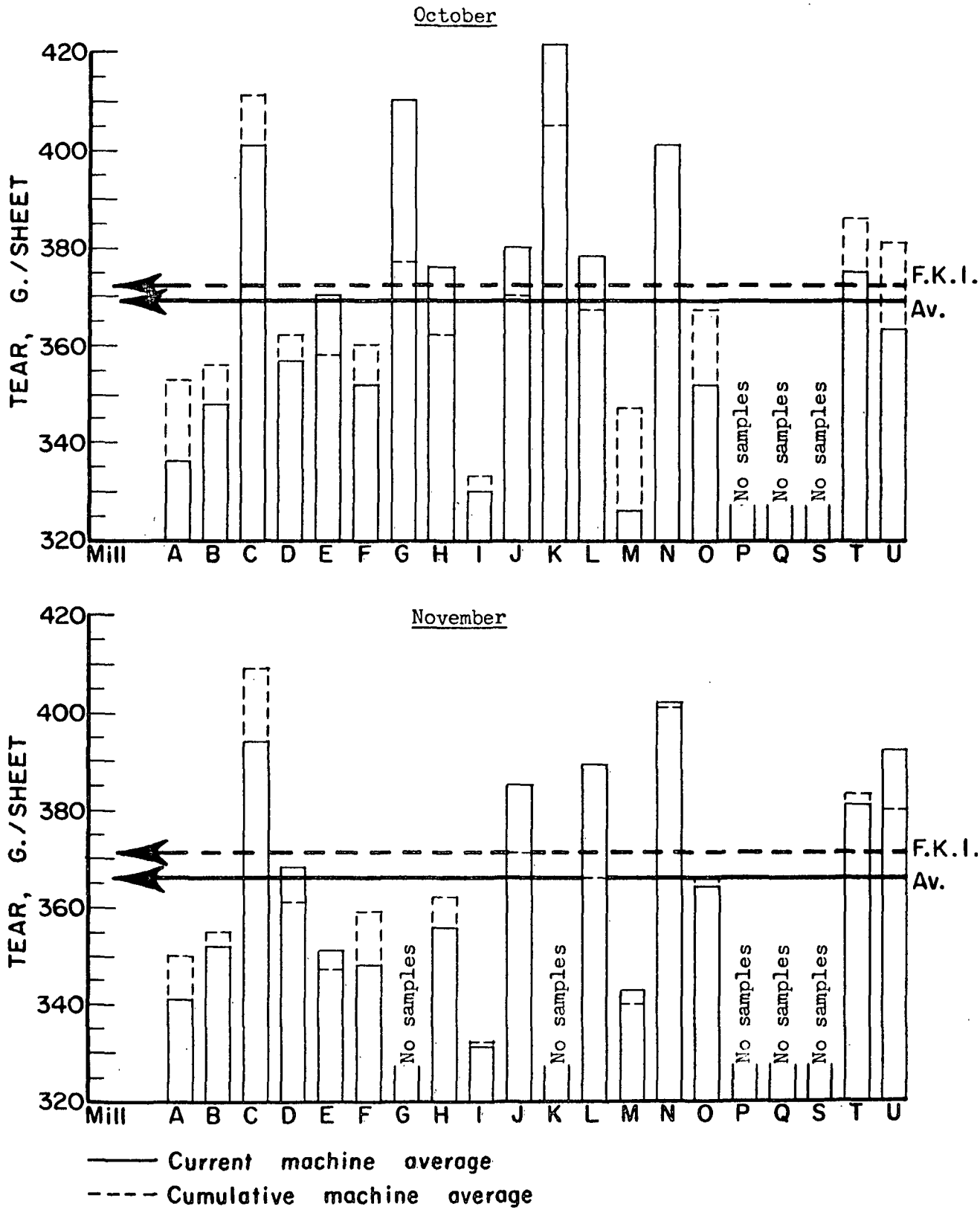

Figure 5. Comparison of Cross-Machine Direction Tear Results

Test	Month	Current Mill Averages Max.	Min.	F.K.I. Averages Current	Cumulative
Basis weight, lb.	October	43.7	42.0	42.8	43.3
	November	43.9	41.8	42.9	43.2
Caliper, points	October	13.8	12.1	12.7	12.6
	November	13.4	12.1	12.6	12.6
Bursting strength, p.s.i. gage	October	121	105	112	111
	November	122	106	114	111
Machine direction Elmendorf tear, g./sheet	October	383	255	324	330
	November	376	290	324	328
Cross-machine direction Elmendorf tear, g./sheet	October	421	326	369	372
	November	402	331	366	371

The test results obtained at the Institute and at the mill during October and November are given alphabetically in Tables IV to XXIII for each mill. Included in each of these tables are the maximum, minimum and average test data obtained at the Institute on each sample lot of linerboard. The data obtained at the Institute during each month include also for each test the calculation of (1) a current mill average that represents the average of the averages obtained on the individual sample lots of linerboard evaluated during a given month, (2) a cumulative mill average that represents the average of the current mill averages for the previous twelve months excluding the current month, (3) a mill factor expressed in per cent that represents the ratio of the current mill average to the cumulative mill average, and (4) a mill index expressed in per cent that represents the ratio of the current mill average to the cumulative F.K.I. average. As mentioned above, the results presented in Tables IV to XXIII also include data obtained at the mills. The mill data include for each test (1) the average result obtained on each sample lot of linerboard and

TABLE IV

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL A

Date Made	Finish	Mch. No.	Basis Weight, lb. Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.	Caliper, points Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.	Bursting Strength, p.s.i. gage Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet In Machine Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet Cross Machine Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.
October, 1961																										
9-18-61	WF1S	2	42.6	40.4	41.9	41.3	-0.6	13.9	12.8	13.3	12.5	-0.8	126	80	109	107	-2	304	248	281	290	+ 9	352	320	335[a]	364	+29
9-26-61	WF1S	2	45.0	41.6	43.2	43.3	+0.1	13.6	12.0	12.9	12.6	-0.3	122	97	108	106	-2	368	296	331	320	+11	368	296	337[a]	370	+33
10- 3-61	WF1S	2	42.0	40.6	41.5	42.4	+0.9	13.1	12.1	12.7	12.5	-0.2	138	100	120	116	-4	352	288	319[a]	332	+13	384	320	342[a]	360	+18
10-16-61	WF1S	2	43.6	42.0	42.5	42.8	+0.3	13.0	12.0	12.8	12.6	-0.2	123	94	109	106	-3	336	264	302[a]	310	+ 8	352	296	328[a]	368	+40
Current Mill Average:					42.3	42.5	+0.2			12.9	12.6	-0.3			112	109	-3			308	313	+ 5			336	366	+30
Cumulative Mill Average:					42.7					13.4					110					321					353		
Mill Factor, %					99.1					96.3					101.8					96.0					95.2		
Mill Index, %					97.7					102.4					100.9					93.3					90.3		
November, 1961																										
10-17-61	WF1S	2	43.6	42.2	42.6	+3.0	+0.4	14.5	12.6	13.4	13.2	-0.2	131	100	118	113	-5	352	240	297[a]	322	+25	392	320	349[a]	352	+ 3
11- 2-61	WF1S	2	43.6	42.0	42.4	43.2	+0.8	13.8	12.7	13.1	12.8	-0.3	139	92	116	118	+2	384	264	319	304	-15	376	312	347[a]	352	+ 5
11- 6-61	WF1S	2	42.2	40.4	41.2	42.0	+0.8	13.1	12.1	12.6	12.7	+0.1	128	76	112	110	-2	328	272	294	302	+ 8	376	304	339[a]	377	+38
11- 9-61	WF1S	2	43.8	41.6	42.3	42.9	+0.6	14.0	12.8	13.4	13.4	0.0	139	89	114	116	+2	400	264	321	320	- 1	408	320	346[a]	384	+38
11-13-61	WF1S	2	43.0	41.4	42.2	42.2	0.0	13.2	12.4	12.8	12.5	-0.3	135	70	112	114	+2	320	240	278	282	+ 4	352	296	325[a]	384	+59
Current Mill Average:					42.1	42.7	+0.6			13.1	12.9	-0.2			114	114	0			302	306	+ 4			341	370	+29
Cumulative Mill Average:					42.6					13.3					110					318					350		
Mill Factor, %					98.8					98.5					103.6					95.0					97.4		
Mill Index, %					97.5					104.0					102.7					92.1					91.9		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE V

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL B

Date Made	Finish	Mch. No.	Basis Weight, lb.					Caliper, points					Bursting Strength, p.s.i. gage					Elmendorf Tear, g./sheet In Machine					Elmendorf Tear, g./sheet Cross Machine				
			Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill	
			Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.
October, 1961																										
10- 5-61	W.F.	-	43.0	41.6	42.2	42.5	+0.3	13.0	11.9	12.5	12.2	-0.3	139	111	125	120	- 5	352	288	315[a]	321	+ 6	384	320	349[a]	360	+11
10- 6-61	W.F.	-	42.6	41.8	42.3	42.7	+0.4	12.9	11.9	12.3	12.1	-0.2	132	103	119	114	- 5	360	280	316[a]	317	+ 1	392	312	355[a]	359	+ 4
10-13-61	W.F.	-	43.4	42.0	42.6	43.0	+0.4	12.0	11.5	11.9	11.5	-0.4	138	108	124	121	- 3	400	320	349[a]	320	-29	392	320	343[a]	336	- 7
10-20-61	W.F.	-	43.4	42.0	42.4	43.1	+0.7	12.9	12.0	12.5	12.1	-0.4	137	102	116	114	- 2	320	232	282[a]	289	+ 7	360	328	343[a]	352	+ 9
Current Mill Average:					42.4	42.8	+0.4			12.3	12.0	-0.3			121	117	- 4			316	312	- 4			348	352	+ 4
Cumulative Mill Average:					43.3					12.7					114					324					356		
Mill Factor, %					97.9					96.9					106.1					97.5					97.8		
Mill Index, %					97.9					97.6					109.0					95.8					93.5		
November, 1961																										
11- 2-61	W.F.	-	42.6	42.2	42.3	43.2	+0.9	13.2	12.1	12.7	12.3	-0.4	147	109	129	119	-10	344	240	315[a]	296	-19	400	336	367[a]	338	-29
11- 3-61	W.F.	-	41.8	40.6	41.5	42.4	+0.9	13.2	12.5	12.9	12.6	-0.3	132	103	116	111	- 5	328	232	287	296	+ 9	400	320	352[a]	325	-27
11-10-61	W.F.	-	44.6	43.8	44.2	44.1	-0.1	13.0	12.0	12.6	12.0	-0.6	135	104	121	118	- 3	344	272	309	293	-16	368	304	339[a]	365	+26
11-17-61	W.F.	-	43.0	41.8	42.4	42.6	+0.2	13.1	11.8	12.5	12.1	-0.4	142	103	121	117	- 4	384	272	333[a]	315	-18	368	320	349[a]	347	- 2
Current Mill Average:					42.6	43.1	+0.5			12.7	12.2	-0.5			122	116	- 6			311	300	-11			352	344	- 8
Cumulative Mill Average:					43.2					12.7					115					322					355		
Mill Factor, %					98.6					100.0					106.1					96.6					99.2		
Mill Index, %					98.6					100.8					109.9					94.8					94.9		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE VI

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL C

Date Made	Finish	Mch. No.	Basis Weight, lb.					Caliper, points					Bursting Strength, p.s.i. gage					Elmendorf Tear, g./sheet In Machine					Elmendorf Tear, g./sheet Cross Machine				
			Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill	
			Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.
October, 1961																										
9-23-61	W.B.	-	44.2	42.0	43.2	41.8	-1.4	13.5	12.0	12.8	12.3	-0.5	135	90	110	104	-6	440	320	383	352	-31	464	360	407[a]	369	-38
9-25-61	W.B.	-	43.4	41.4	42.3	42.1	-0.2	13.0	11.0	12.1	11.6	-0.5	137	88	113	106	-7	352	312	333	313	-20	400	352	383[a]	377	- 6
10-11-61	W.B.	-	43.8	41.8	42.4	42.4	0.0	12.8	11.4	12.0	11.6	-0.4	135	75	110	109	-1	400	288	353[a]	339	-14	432	376	396[a]	412	+16
10-12-61	W.B.	-	43.4	42.0	42.3	42.1	-0.2	12.8	11.4	12.1	11.8	-0.3	126	90	108	111	+3	440	352	378[a]	352	-26	448	376	419[a]	413	- 6
Current Mill Average:					42.6	42.1	-0.5			12.2	11.8	-0.4			110	108	-2			362	339	-23			401	393	- 8
Cumulative Mill Average:					43.1					12.0					110					366					411		
Mill Factor, %					98.8					101.7					100.0					98.9					97.6		
Mill Index, %					98.4					96.8					99.1					109.7					107.8		
November, 1961																										
11- 2-61	W.B.	-	43.8	42.2	42.7	42.0	-0.7	12.8	11.8	12.0	11.4	-0.6	124	89	108	106	-2	432	336	387	319	-68	448	392	418[a]	391	-27
11-10-61	W.B.	-	43.6	41.8	42.4	41.8	-0.6	12.7	11.3	12.0	11.6	-0.4	139	89	110	108	-2	408	328	384[a]	357	-27	400	336	369[a]	361	- 8
11-13-61	W.B.	-	44.0	42.0	42.9	42.3	-0.6	12.8	11.8	12.2	11.7	-0.5	129	85	110	107	-3	408	280	357[a]	345	-12	408	368	393[a]	388	- 5
Current Mill Average:					42.7	42.0	-0.7			12.1	11.6	-0.5			110	107	-3			376	340	-36			394	380	-14
Cumulative Mill Average:					43.0					12.0					109					365					409		
Mill Factor, %					99.3					100.8					100.9					103.0					96.3		
Mill Index, %					98.8					96.0					99.1					114.6					106.2		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE VII

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL D

Date Made	Finish	Mch. No.	Basis Weight, lb.					Caliper, points					Bursting Strength, p.s.i. gage					Elmendorf Tear, g./sheet In Machine					Elmendorf Tear, g./sheet Cross Machine				
			Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill	
			Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.
October, 1961																										
9- 3-61	W.F.	1	44.2	43.0	43.9	43.9	0.0	13.0	12.2	12.7	12.7	0.0	140	95	111	109	-2	352	272	319	282	-37	448	328	378[a]	380	+ 2
9- 1-61	W.F.	1	44.6	43.6	44.0	44.1	+0.1	12.9	12.0	12.4	12.7	+0.3	135	92	114	110	-4	368	240	315[a]	312	- 3	416	344	387[a]	389	+ 2
9- 7-61	W.F.	1	42.4	41.6	42.0	42.8	+0.8	12.3	11.5	12.0	12.1	+0.1	125	85	108	106	-2	368	248	299[a]	297	- 2	384	320	353[a]	378	+25
9- 8-61	W.F.	1	43.6	42.2	43.2	43.8	+0.6	13.2	12.0	12.5	12.5	0.0	126	84	108	109	+1	360	272	312	312	0	400	336	376[a]	394	+18
9-24-61	W.F.	1	44.6	41.6	42.8	43.4	+0.6	12.6	11.8	12.2	12.3	+0.1	140	98	118	114	-4	368	256	297[a]	289	- 8	448	312	349[a]	342	- 7
9-25-61	W.F.	1	44.0	40.4	42.4	42.9	+0.5	12.8	12.0	12.2	12.0	-0.2	131	81	105	105	0	328	272	297	301	+ 4	408	304	365[a]	364	- 1
9-26-61	W.F.	1	43.8	42.2	43.1	43.5	+0.4	12.7	11.8	12.2	12.1	-0.1	133	79	107	109	+2	344	272	297	293	- 4	368	304	334[a]	356	+22
9-27-61	W.F.	1	44.2	42.2	43.2	43.8	+0.6	13.0	11.9	12.5	12.4	-0.1	140	94	119	115	-4	336	208	276	298	+22	408	320	373[a]	380	+ 7
10- 1-61	W.F.	1	43.6	41.0	42.0	42.8	+0.8	11.9	11.1	11.4	11.6	+0.2	137	94	114	114	0	344	224	281	298	+17	384	312	337[a]	356	+19
10- 2-61	W.F.	1	44.2	42.0	42.8	43.6	+0.8	13.1	12.1	12.6	12.5	-0.1	128	87	112	112	0	320	232	288[a]	303	+15	368	304	343[a]	376	+33
10- 3-61	W.F.	1	43.8	40.2	42.1	43.1	+1.0	12.8	11.5	12.2	12.3	+0.1	133	85	108	111	+3	320	240	285[a]	314	+29	368	320	337[a]	374	+37
10-10-61	W.F.	1	44.0	40.4	42.7	42.9	+0.2	12.5	11.8	12.1	12.0	-0.1	141	95	116	113	-3	344	224	291[a]	327	+36	400	320	357[a]	380	+23
Current Mill Average:					42.9	43.4	+0.5			12.2	12.3	+0.1			112	111	-1			296	302	+ 6			357	372	+15
Cumulative Mill Average:					43.3					12.4					110					310					362		
Mill Factor, %					99.1					98.4					101.8					95.5					98.6		
Mill Index, %					99.1					96.8					100.9					89.7					96.0		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

NOTE: All "current mill average" data are calculated from the totals of the individual readings.

TABLE VII (Continued)

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL D

Date Made	Finish	Mch. No.	Basis Weight, lb. Institute Max.	Min.	Av.	Mill Av.	Diff.	Caliper, points Institute Max.	Min.	Av.	Mill Av.	Diff.	Bursting Strength, p.s.i. gage Institute Max.	Min.	Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet In Machine Institute Max.	Min.	Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet Cross Machine Institute Max.	Min.	Av.	Mill Av.	Diff.
													November, 1961														
10-20-61	W.F.	1	44.6	42.8	43.7	43.7	0.0	13.0	12.0	12.6	12.4	-0.2	122	89	106	109	+3	368	272	302	318	+16	384	320	349[a]	378	+29
10-23-61	W.F.	1	43.8	41.8	42.7	43.0	+0.3	13.3	12.2	12.9	12.8	-0.1	122	90	107	111	+4	336	272	293	306	+13	456	328	359[a]	378	+19
10-25-61	W.F.	1	44.0	41.8	43.0	42.5	-0.5	13.5	12.1	12.8	12.6	-0.2	122	84	103	111	+8	400	272	318	313	- 5	432	336	381[a]	391	+10
10-28-61	W.F.	1	44.4	42.0	43.7	44.3	+0.6	13.3	12.0	12.7	12.8	+0.1	138	90	110	110	0	416	296	333	335	+ 2	432	352	385[a]	390	+ 5
Current Mill Average:					43.3	43.4	+0.1			12.8	12.6	-0.2			107	110	+3			312	318	+ 6			368	384	+16
Cumulative Mill Average:					43.2					12.4					110					307					361		
Mill Factor, %					100.2					103.2					97.3					101.6					101.9		
Mill Index, %					100.2					101.6					96.4					95.1					99.2		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE VIII

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL E

Date Made	Finish	Mch. No.	Basis Weight, lb. Institute Max.	Min.	Av.	Mill Av.	Diff.	Caliper, points Institute Max.	Min.	Av.	Mill Av.	Diff.	Bursting Strength, p.s.i. gage Institute Max.	Min.	Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet In Machine Institute Max.	Min.	Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet Cross Machine Institute Max.	Min.	Av.	Mill Av.	Diff.
October, 1961																											
9-13-61	W.F.	1	43.8	40.2	42.4	42.4	0.0	14.0	13.0	13.5	12.8	-0.7	133	70	108	110	+2	352	256	311[a]	283	-28	432	320	373[a]	359	-14
9-21-61	W.F.	1	42.8	41.4	42.2	42.5	+0.3	14.0	13.0	13.3	12.8	-0.5	132	78	108	109	+1	352	248	310[a]	291	-19	448	320	378[a]	360	-18
10- 1-61	W.F.	1	45.8	42.4	43.8	43.8	0.0	13.0	12.1	12.6	12.0	-0.6	129	94	114	116	+2	328	264	295[a]	268	-27	424	312	358[a]	356	- 2
Current Mill Average:					42.8	42.9	+0.1			13.1	12.5	-0.6			110	112	+2			306	281	-25			370	358	-12
Cumulative Mill Average:					43.4					12.7					109					286					346		
Mill Factor, %					98.6					103.1					100.9					107.0					106.9		
Mill Index, %					98.8					104.0					99.1					92.7					99.5		
November, 1961																											
10-18-61	W.F.	1	44.4	42.2	43.3	43.9	+0.6	13.0	11.9	12.6	12.3	-0.3	145	89	116	114	-2	352	280	309	275	-34	376	312	351[a]	371	+20
10-24-61	W.F.	1	45.4	43.0	44.1	43.7	-0.4	13.1	12.1	12.6	12.3	-0.3	143	85	118	114	-4	328	272	299[a]	281	-18	456	320	364[a]	366	+ 2
11- 7-61	W.F.	1	45.0	42.8	44.0	43.5	-0.5	12.9	12.0	12.6	12.6	0.0	140	94	115	115	0	360	272	309[a]	307	- 2	368	320	339[a]	375	+36
Current Mill Average:					43.8	43.7	-0.1			12.6	12.4	-0.2			116	114	-2			305	288	-17			351	371	+20
Cumulative Mill Average:					43.3					12.7					109					287					347		
Mill Factor, %					101.2					99.2					106.4					106.3					101.2		
Mill Index, %					101.4					100.0					104.5					93.0					94.6		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE IX

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL F

Date Made	Finish	Mch. No.	Basis Weight, lb.					Caliper, points					Bursting Strength, p.s.i. gage					Elmendorf Tear, g./sheet In Machine					Elmendorf Tear, g./sheet Cross Machine				
			Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill	
			Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.
October, 1961																										
9-19-61	W.F.	1	44.0	43.2	43.6	43.5	-0.1	12.9	11.9	12.4	11.8	-0.6	129	103	117	117	0	352	272	308[a]	313	+ 5	416	320	361[a]	367	+ 6
9-20-61	W.F.	1	44.4	43.8	44.0	43.3	-0.7	12.2	11.4	11.9	12.1	+0.2	140	92	118	111	-7	368	256	317	335	+18	472	336	390[a]	397	+ 7
10- 2-61	W.F.	2	43.8	42.2	42.8	42.7	-0.1	12.1	11.3	11.9	11.7	-0.2	137	101	116	111	-5	328	264	297[a]	316	+19	384	304	336[a]	381	+45
10- 2-61	W.F.	2	43.6	42.4	42.8	42.8	0.0	12.2	11.6	11.9	11.8	-0.1	138	93	115	112	-3	320	272	303[a]	311	+ 8	360	304	331[a]	384	+53
10- 2-61	W.F.	2	44.0	41.6	42.8	42.9	+0.1	13.0	11.9	12.3	12.0	-0.3	129	97	113	114	+1	344	240	281[a]	319	+38	360	304	333[a]	386	+53
10-13-61	W.F.	2	43.8	42.4	43.3	43.4	+0.1	13.0	12.0	12.4	11.8	-0.6	126	96	111	112	+1	368	272	324[a]	328	+ 4	400	336	361[a]	376	+15
Current Mill Average:					43.2	43.1	-0.1			12.1	11.9	-0.2			115	113	-2			305	320	+15			352	382	+30
Cumulative Mill Average:					43.2					12.0					116					320					360		
Mill Factor, %					100.0					100.8					99.1					95.3					97.8		
Mill Index, %					99.8					96.0					103.6					92.4					94.6		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE IX (continued)

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL F

Date Made	Finish	Mch. No.	Basis Weight, lb.					Caliper, points					Bursting Strength, p.s.i. gage					Elmendorf Tear, g./sheet In Machine					Elmendorf Tear, g./sheet Cross Machine				
			Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill	
			Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.
November, 1961																										
11- 2-61	W.F.	1	44.2	42.4	43.2	43.6	+0.4	12.9	12.0	12.5	12.0	-0.5	138	100	118	116	-2	424	312	351[a]	337	-14	376	328	359[a]	389	+30
11- 2-61	W.F.	1	43.8	42.4	43.2	43.4	+0.2	12.6	11.8	12.2	12.0	-0.2	135	95	112	113	+1	368	272	323[a]	335	+12	416	312	349[a]	366	+17
11- 8-61	W.F.	2	44.2	42.4	43.4	43.8	+0.4	12.7	11.6	12.1	12.0	-0.1	140	90	114	111	-3	336	264	295[a]	326	+31	384	320	341[a]	369	+28
11- 8-61	W.F.	2	44.0	42.6	43.5	43.7	+0.2	12.4	11.6	12.0	11.8	-0.2	130	93	115	112	-3	384	264	323[a]	322	- 1	368	312	342[a]	366	+24
Current Mill Average:					43.3	43.6	+0.3			12.2	12.0	-0.2			115	113	-2			323	330	+ 7			348	373	+25
Cumulative Mill Average:					43.2					12.1					116					318					359		
Mill Factor, %					100.2					100.8					99.1					101.6					96.9		
Mill Index, %					100.2					96.8					103.6					98.5					93.8		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE X

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL G

Date Made	Finish	Mch. No.	Basis Weight, lb. Institute Max.	Min.	Av.	Mill Av.	Diff.	Caliper, points Institute Max.	Min.	Av.	Mill Av.	Diff.	Bursting Strength, p.s.i. gage Institute Max.	Min.	Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet In Machine Institute Max.	Min.	Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet Cross Machine Institute Max.	Min.	Av.	Mill Av.	Diff.
October, 1961																											
9-30-61	W.F.	3	43.8	42.0	42.9	43.8	+0.9	14.3	13.5	13.9	13.6	-0.3	118	88	107	110	+3	392	296	347[a]	346	- 1	432	368	407[a]	422	+15
10- 4-61	W.F.	3	44.0	42.2	43.5	43.7	+0.2	14.3	13.2	13.9	13.5	-0.4	123	93	107	112	+5	416	328	367[a]	344	-23	464	376	419[a]	412	- 7
10-10-61	W.F.	3	43.8	42.4	43.4	44.2	+0.8	14.1	13.1	13.6	13.4	-0.2	117	85	105	106	+1	448	328	378	356	-22	448	376	405[a]	411	+ 6
Current Mill Average:					43.3	43.9	+0.6			13.8	13.5	-0.3			106	109	+3			364	349	-15			410	415	+ 5
Cumulative Mill Average:					43.8					11.7					111					338					377		
Mill Factor, %					98.9					117.9					95.5					107.7					108.8		
Mill Index, %					100.0					109.5					95.5					110.3					110.2		
November, 1961																											
No samples submitted.																											

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XI

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL H

Date Made	Finish	Mch. No.	Basis Weight, lb. Institute Max.	Min.	Av.	Mill Av.	Diff.	Caliper, points Institute Max.	Min.	Av.	Mill Av.	Diff.	Bursting Strength, p.s.i. gage Institute Max.	Min.	Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet In Machine Institute Max.	Min.	Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet Cross Machine Institute Max.	Min.	Av.	Mill Av.	Diff.
October, 1961																											
9-18-61	W.F.	-	44.6	42.0	42.9	43.3	+0.4	13.0	11.9	12.4	12.4	0.0	128	89	111	105	-6	408	272	341[a]	328	-13	432	328	375[a]	374	- 1
9-18-61	W.F.	-	43.8	41.4	42.6	43.3	+0.7	13.2	11.2	12.2	12.3	+0.1	127	102	114	108	-6	432	288	341[a]	336	- 5	424	344	376[a]	373	- 3
Current Mill Average:					42.8	43.3	+0.5			12.3	12.3	0.0			112	106	-6			341	332	- 9			376	374	- 2
Cumulative Mill Average:					43.3					12.4					113					349					362		
Mill Factor, %					98.8					99.2					99.1					97.7					103.9		
Mill Index, %					98.8					97.6					100.9					103.3					101.1		
November, 1961																											
10-11-61	W.F.	-	43.8	41.8	42.4	43.3	+0.9	13.1	11.2	12.3	11.7	-0.6	138	85	117	116	-1	448	312	369[a]	352	-17	400	344	371[a]	393	+22
10-11-61	W.F.	-	43.0	42.0	42.3	43.8	+1.5	12.8	11.6	12.2	12.5	+0.3	139	100	118	110	-8	400	328	361[a]	334	-27	424	344	377[a]	370	- 7
11- 6-61	W.F.	-	43.6	42.0	42.9	42.1	-0.8	12.3	11.0	11.8	12.0	+0.2	132	101	113	108	-5	368	272	319[a]	299	-20	400	304	353[a]	335	-18
11- 6-61	W.F.	-	44.0	42.0	42.5	42.5	0.0	12.6	11.2	12.0	12.0	0.0	127	92	108	105	-3	368	264	303[a]	281	-22	344	288	325[a]	333	+ 8
Current Mill Average:					42.5	42.9	+0.4			12.1	12.0	-0.1			114	110	-4			338	316	-22			356	358	+ 2
Cumulative Mill Average:					43.2					12.4					113					348					362		
Mill Factor, %					98.4					97.6					100.9					97.1					98.3		
Mill Index, %					98.4					96.0					102.7					103.0					96.0		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note : All "current mill average" data are calculated from the totals of the individual readings.

TABLE XII

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL I

Date Made	Finish	Mch. No.	Basis Weight, lb. Institute Max.	Basis Weight, lb. Institute Min.	Basis Weight, lb. Institute Av.	Basis Weight, lb. Mill Av.	Basis Weight, lb. Diff.	Caliper, points Institute Max.	Caliper, points Institute Min.	Caliper, points Institute Av.	Caliper, points Mill Av.	Caliper, points Diff.	Bursting Strength, p.s.i. gage Institute Max.	Bursting Strength, p.s.i. gage Institute Min.	Bursting Strength, p.s.i. gage Institute Av.	Bursting Strength, p.s.i. gage Mill Av.	Bursting Strength, p.s.i. gage Diff.	Elmendorf Tear, g./sheet In Machine Institute Max.	Elmendorf Tear, g./sheet In Machine Institute Min.	Elmendorf Tear, g./sheet In Machine Institute Av.	Elmendorf Tear, g./sheet In Machine Mill Av.	Elmendorf Tear, g./sheet In Machine Diff.	Elmendorf Tear, g./sheet Cross Machine Institute Max.	Elmendorf Tear, g./sheet Cross Machine Institute Min.	Elmendorf Tear, g./sheet Cross Machine Institute Av.	Elmendorf Tear, g./sheet Cross Machine Mill Av.	Elmendorf Tear, g./sheet Cross Machine Diff.
October, 1961																										
8-21-61	W.F.	1	42.4	41.6	42.0	42.0	0.0	12.8	11.8	12.2	12.0	-0.2	138	90	117	116	-1	328	240	277	238	-39	384	312	331[a]	325	- 6
8-25-61	W.F.	1	43.0	42.0	42.3	42.1	-0.2	12.5	11.9	12.1	12.0	-0.1	134	86	115	112	-3	320	264	289	252	-37	384	320	345[a]	340	- 5
9- 5-61	W.F.	1	42.6	40.8	41.8	41.9	+0.1	12.3	11.8	12.1	12.0	-0.1	145	95	118	116	-2	336	240	275[a]	239	-36	344	288	319[a]	322	+ 3
9-13-61	W.F.	1	42.4	41.4	42.0	42.0	0.0	12.3	12.0	12.1	12.2	+0.1	138	98	119	119	0	360	240	285[a]	252	-33	352	280	323[a]	330	+ 7
9-19-61	----	1	42.2	41.8	42.0	42.2	+0.2	13.8	12.8	13.1	12.1	-1.0	122	94	106	113	+7	320	240	274	252	-22	360	312	327[a]	337	+10
9-28-61	W.F.	1	42.4	41.6	42.0	41.9	-0.1	12.4	11.8	12.1	12.2	+0.1	136	101	115	117	+2	320	240	277[a]	250	-27	360	280	327[a]	331	+ 4
10- 3-61	W.F.	1	42.6	41.2	42.1	42.0	-0.1	12.9	11.8	12.2	12.2	0.0	135	83	110	116	+6	312	240	275	248	-27	368	288	330[a]	332	+ 2
10-12-61	W.F.	1	42.4	41.0	41.9	42.0	+0.1	12.5	11.7	12.2	12.2	0.0	127	82	111	116	+5	320	224	281[a]	248	-33	392	272	333[a]	333	0
Current Mill Average:					42.0	42.0	0.0			12.3	12.1	-0.2			114	115	+1			279	247	-32			330	331	+ 1
Cumulative Mill Average:					42.6					12.4					114					289					333		
Mill Factor, %					98.6					99.2					100.0					96.5					99.1		
Mill Index, %					97.0					97.6					102.7					84.5					88.7		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XII (continued)

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL I

Date Made	Finish	Mch. No.	Basis Weight, lb.					Caliper, points					Bursting Strength, p.s.i. gage					Elmendorf Tear, g./sheet In Machine					Elmendorf Tear, g./sheet Cross Machine				
			Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill	
			Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.
November, 1961																										
10-16-61	W.F.	1	42.2	40.8	41.7	42.0	+0.3	12.6	11.8	12.1	12.1	0.0	140	93	118	111	-7	312	248	280[a]	248	-32	352	304	325[a]	336	+11
10-24-61	----	-	41.8	40.6	41.6	42.0	+0.4	12.9	11.8	12.3	12.1	-0.2	143	100	118	112	-6	320	248	288	253	-35	392	280	331[a]	335	+ 4
11- 2-61	W.F.	1	42.4	40.6	41.9	41.9	0.0	12.7	11.7	12.2	12.0	-0.2	146	75	114	112	-2	360	240	299	251	-48	368	320	335[a]	333	- 2
11-11-61	----	-	42.0	41.4	41.9	41.9	0.0	12.7	11.7	12.2	12.0	-0.2	141	88	117	111	-6	320	256	294	254	-40	368	320	331[a]	332	+ 1
Current Mill Average:					41.8	42.0	+0.2			12.2	12.1	-0.1			117	112	-5			290	252	-38			331	334	+ 3
Cumulative Mill Average:					42.5					12.4					114					288					332		
Mill Factor, %					98.4					98.4					102.6					100.7					99.7		
Mill Index, %					96.8					96.8					105.4					88.4					89.2		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XIII

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL J

Date Made	Finish	Mch. No.	Basis Weight, lb.					Caliper, points					Bursting Strength, p.s.i. gage					Elmendorf Tear, g./sheet In Machine					Elmendorf Tear, g./sheet Cross Machine				
			Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill	
			Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.
October, 1961																										
9- 3-61	WFlS	2	43.8	42.2	43.1	43.2	+0.1	14.1	13.1	13.7	12.9	-0.8	143	100	114	112	-2	472	296	366[a]	337	-29	424	320	375[a]	430	+55
9-12-61	WFlS	2	43.6	42.0	42.4	42.4	0.0	13.1	12.2	12.8	12.4	-0.4	142	100	118	116	-2	376	296	335[a]	342	+ 7	424	352	388[a]	422	+34
9-21-61	WFlS	2	44.4	42.0	43.8	43.1	-0.7	13.9	13.0	13.4	12.9	-0.5	151	99	119	115	-4	432	320	373[a]	367	- 6	424	328	375[a]	454	+79
9-23-61	WFlS	2	43.8	41.2	42.4	42.4	0.0	13.2	12.3	12.9	12.7	-0.2	132	85	117	110	-7	368	272	334[a]	339	+ 5	456	384	406[a]	419	+13
10- 3-61	W.F.	2	43.8	41.8	42.4	42.6	+0.2	13.8	12.7	13.2	12.8	-0.4	128	94	111	106	-5	400	296	337	365	+28	416	352	373[a]	402	+29
10- 7-61	WFlS	2	44.2	42.6	43.5	43.2	-0.3	13.5	12.9	13.1	12.7	-0.4	133	92	109	111	+2	400	320	363[a]	382	+19	432	336	386[a]	410	+24
10- 8-61	WFlS	2	43.8	42.2	42.8	42.9	+0.1	13.4	12.7	13.1	12.4	-0.7	127	86	109	103	-6	408	296	357[a]	349	- 8	432	336	374[a]	405	+31
10-11-61	WFlS	2	42.2	40.8	41.7	42.5	+0.8	13.8	12.5	13.2	12.9	-0.3	122	70	106	104	-2	432	280	317[a]	338	+21	432	320	367[a]	389	+22
Current Mill Average:					42.8	42.8	0.0			13.2	12.7	-0.5			113	110	-3			348	352	+ 4			380	416	+36
Cumulative Mill Average:					43.3					13.0					110					327					370		
Mill Factor, %					98.8					101.5					102.7					106.4					102.7		
Mill Index, %					98.8					104.8					101.8					105.5					102.2		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XIII (continued)

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL J

Date Made	Finish	Mch. No.	Basis Weight, lb. Institute Max.	Min.	Av.	Mill Av.	Diff.	Caliper, points Institute Max.	Min.	Av.	Mill Av.	Diff.	Bursting Strength, p.s.i. gage Institute Max.	Min.	Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet In Machine Institute Max.	Min.	Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet Cross Machine Institute Max.	Min.	Av.	Mill Av.	Diff.
													November, 1961														
10-20-61	WF1S	2	42.2	41.8	42.0	42.3	+0.3	13.5	12.5	13.0	12.6	-0.4	131	92	113	102	-11	360	280	333	326	- 7	424	312	378[a]	378	0
10-23-61	WF1S	2	43.8	41.8	42.7	42.6	-0.1	14.1	13.1	13.6	12.9	-0.7	125	90	108	102	- 6	400	304	351[a]	341	-10	408	352	388[a]	406	+18
10-31-61	WF1S	2	44.6	42.0	43.2	43.0	-0.2	14.0	12.7	13.4	12.3	-1.1	129	98	113	108	- 5	352	256	322	321	- 1	432	368	395[a]	413	+18
10-31-61	WF1S	2	43.6	42.0	43.0	42.3	-0.7	13.8	12.9	13.2	13.0	-0.2	139	91	111	108	- 3	368	272	305	326	+21	416	344	376[a]	400	+24
11- 2-61	WF1S	2	43.0	41.2	42.2	42.3	+0.1	13.8	12.8	13.2	13.0	-0.2	122	91	106	104	- 2	376	256	317	326	+ 9	448	352	391[a]	428	+37
11- 5-61	WF1S	2	42.6	41.6	42.1	42.1	0.0	13.4	12.8	13.1	13.0	-0.1	120	78	100	104	+ 4	360	272	319[a]	324	+ 5	448	352	381[a]	420	+39
Current Mill Average:					42.5	42.4	-0.1			13.2	12.8	-0.4			109	105	- 4			324	327	+ 3			385	407	+22
Cumulative Mill Average:					43.3					13.1					111					329					371		
Mill Factor, %					98.2					100.8					98.2					98.5					103.8		
Mill Index, %					98.4					104.8					98.2					98.8					103.8		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XIV

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL K

Date Made	Finish	Mch. No.	Basis Weight, lb. Institute Max.	Basis Weight, lb. Institute Min.	Basis Weight, lb. Institute Av.	Basis Weight, lb. Mill Av.	Basis Weight, lb. Diff.	Caliper, points Institute Max.	Caliper, points Institute Min.	Caliper, points Institute Av.	Caliper, points Mill Av.	Caliper, points Diff.	Bursting Strength, p.s.i. gage Institute Max.	Bursting Strength, p.s.i. gage Institute Min.	Bursting Strength, p.s.i. gage Institute Av.	Bursting Strength, p.s.i. gage Mill Av.	Bursting Strength, p.s.i. gage Diff.	Elmendorf Tear, g./sheet In Machine Institute Max.	Elmendorf Tear, g./sheet In Machine Institute Min.	Elmendorf Tear, g./sheet In Machine Institute Av.	Elmendorf Tear, g./sheet In Machine Mill Av.	Elmendorf Tear, g./sheet In Machine Diff.	Elmendorf Tear, g./sheet Cross Machine Institute Max.	Elmendorf Tear, g./sheet Cross Machine Institute Min.	Elmendorf Tear, g./sheet Cross Machine Institute Av.	Elmendorf Tear, g./sheet Cross Machine Mill Av.	Elmendorf Tear, g./sheet Cross Machine Diff.
October, 1961																											
8-26-61	W.F.	-	43.8	41.8	43.1	43.2	+0.1	13.1	12.2	12.7	12.1	-0.6	139	92	113	108	-5	448	328	376[a]	384	+ 8	472	360	417[a]	399	-18
10- 5-61	W.F.	-	44.0	42.2	43.3	43.6	+0.3	13.6	12.1	13.1	12.5	-0.6	141	104	118	110	-8	424	328	389[a]	423	+34	472	376	425[a]	445	+20
Current Mill Average:					43.2	43.4	+0.2			12.9	12.3	-0.6			116	109	-7			383	403	+20			421	422	+ 1
Cumulative Mill Average:					43.6					12.6					109					367					405		
Mill Factor, %					99.1					102.4					106.4					104.4					104.0		
Mill Index, %					99.8					102.4					104.5					116.1					113.2		

November, 1961

No samples submitted.

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XV

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL L

Date Made	Finish	Mch. No.	Basis Weight, lb. Institute Max.	Min.	Av.	Mill Av.	Diff.	Caliper, points Institute Max.	Min.	Av.	Mill Av.	Diff.	Bursting Strength, p.s.i. gage Institute Max.	Min.	Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet In Machine Institute Max.	Min.	Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet Cross Machine Institute Max.	Min.	Av.	Mill Av.	Diff.
October, 1961																											
9-16-61	WF1S	1	42.4	41.8	42.2	42.8	+0.6	13.8	12.9	13.2	12.8	-0.4	120	95	107	103	-4	368	288	333	361	+28	400	336	369[a]	402	+33
9-17-61	WF1S	1	42.6	42.0	42.2	43.0	+0.8	13.3	12.8	13.1	12.7	-0.4	122	92	108	104	-4	384	272	321[a]	363	+42	456	320	371[a]	407	+36
9-26-61	WF1S	1	43.6	42.0	42.6	42.9	+0.3	13.4	12.3	13.0	12.6	-0.4	137	90	114	111	-3	384	288	328	332	+ 4	464	352	397[a]	383	-14
10- 3-61	WF1S	1	43.6	41.8	42.5	43.0	+0.5	14.0	12.6	13.0	12.9	-0.1	136	90	116	108	-8	352	272	309[a]	350	+41	408	344	375[a]	394	+19
Current Mill Average:					42.4	42.9	+0.5			13.1	12.8	-0.3			111	107	-4			323	351	+28			378	396	+18
Cumulative Mill Average:					43.2					13.4					111					333					367		
Mill Factor, %					98.1					97.8					100.0					97.0					103.0		
Mill Index, %					97.9					104.0					100.0					97.9					101.6		
November, 1961																											
10- 4-61	WF1S	1	43.6	42.2	42.6	43.1	+0.5	14.2	12.5	13.2	12.8	-0.4	130	93	115	108	-7	376	272	320[a]	351	+31	432	336	385[a]	395	+10
10-20-61	WF1S	1	44.6	41.6	43.2	43.1	-0.1	14.1	13.0	13.6	13.0	-0.6	132	90	109	105	-4	448	320	375	356	-19	432	344	393[a]	402	+ 9
Current Mill Average:					42.9	43.1	+0.2			13.4	12.9	-0.5			112	107	-5			347	353	+ 6			389	399	+10
Cumulative Mill Average:					43.0					13.3					111					328					366		
Mill Factor, %					99.8					100.8					100.9					105.8					106.3		
Mill Index, %					99.3					106.3					100.9					105.8					104.9		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XVI

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL M

Date Made	Finish	Mch. No.	Basis Weight, lb.					Caliper, points					Bursting Strength, p.s.i. gage					Elmendorf Tear, g./sheet In Machine					Elmendorf Tear, g./sheet Cross Machine				
			Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill	
			Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.
October, 1961																										
9-11-61	----	-	42.6	42.0	42.3	42.7	+0.4	13.0	12.1	12.8	12.5	-0.3	134	99	119	123	+4	288	248	259	290	+31	352	320	331[a]	357	+26
10- 4-61	WF1S	-	42.8	42.0	42.4	42.6	+0.2	13.6	12.3	12.9	12.3	-0.6	147	101	122	126	+4	288	192	250	252	+ 2	336	296	321[a]	319	- 2
Current Mill Average:					42.3	42.6	+0.3			12.8	12.4	-0.4			120	124	+4			255	271	+16			326	338	+12
Cumulative Mill Average:					42.8					13.2					121					304					347		
Mill Factor, %					98.8					97.0					99.2					83.9					93.9		
Mill Index, %					97.7					101.6					108.1					77.3					87.6		
November, 1961																										
10-16-61	WF1S	1	42.4	41.8	42.0	42.3	+0.3	13.0	12.2	12.6	12.1	-0.5	138	99	118	117	-1	392	280	317[a]	267	-50	360	320	336[a]	341	+ 5
10-27-61	WF1S	1	43.2	41.8	42.3	42.7	+0.4	14.2	12.7	13.6	13.1	-0.5	134	90	113	114	+1	336	256	296[a]	269	-27	384	320	349[a]	365	+16
11- 8-61	WF1S	1	43.8	42.0	42.8	42.6	-0.2	13.8	13.1	13.4	13.0	-0.4	134	82	114	118	+4	320	248	283[a]	242	-41	400	288	345[a]	367	+22
Current Mill Average:					42.4	42.5	+0.1			13.2	12.8	-0.4			115	116	+1			299	260	-39			343	358	+15
Cumulative Mill Average:					42.6					13.1					121					288					340		
Mill Factor, %					99.5					100.8					95.0					103.8					100.9		
Mill Index, %					98.1					104.8					103.6					91.2					92.5		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XVII

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL N

Date Made	Finish	Mch. No.	Basis Weight, lb.					Caliper, points					Bursting Strength, p.s.i. gage					Elmendorf Tear, g./sheet In Machine					Elmendorf Tear, g./sheet Cross Machine				
			Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill	
			Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.
October, 1961																										
9-20-61	----	2	44.4	43.6	43.9	43.8	-0.1	14.0	12.5	13.1	12.3	-0.8	132	80	106	102	-4	464	336	421[a]	---	---	464	368	412[a]	---	---
9-26-61	WF1S	2	45.6	44.4	44.9	44.7	-0.2	14.4	12.4	13.2	12.5	-0.7	133	74	103	103	0	456	320	379[a]	---	---	480	312	412[a]	---	---
9-27-61	WF1S	2	44.6	42.4	43.7	43.6	-0.1	13.7	11.9	12.7	12.1	-0.6	140	89	112	108	-4	416	288	363[a]	---	---	408	352	387[a]	---	---
10- 4-61	WF1S	1	44.0	41.6	42.6	42.5	-0.1	13.0	12.0	12.3	11.7	-0.6	113	72	97	104	+7	408	296	347[a]	---	---	440	352	395[a]	---	---
10- 6-61	WF1S	1	44.0	41.6	42.6	42.7	+0.1	12.7	11.7	12.2	11.8	-0.4	121	83	102	97	-5	392	320	347	---	---	464	336	375[a]	---	---
10-10-61	WF1S	2	44.4	42.2	43.3	43.2	-0.1	13.3	12.3	12.8	12.2	-0.6	139	71	100	96	-4	408	304	358[a]	---	---	472	360	407[a]	---	---
10-11-61	WF1S	2	46.0	43.8	44.6	44.6	0.0	14.1	12.8	13.2	12.4	-0.8	140	78	114	111	-3	480	304	376	---	---	464	352	419[a]	---	---
Current Mill Average:					43.7	43.6	-0.1			12.8	12.1	-0.7			105	103	-2			370					401		
Cumulative Mill Average:					43.4					12.7					105					360					401		
Mill Factor, %					100.7					100.8					100.0					102.8					100.0		
Mill Index, %					100.9					101.6					94.6					112.1					107.8		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XVII (continued)

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL N

Date Made	Finish	Mch. No.	Basis Weight, lb. Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.	Caliper, points Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.	Bursting Strength, p.s.i. gage Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet In Machine Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet Cross Machine Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.
November, 1961																										
11- 7-61	WF1S	2	44.8	42.4	43.7	43.9	+0.2	13.9	12.1	12.9	12.0	-0.9	138	68	102	108	+6	448	304	370	---	---	456	352	401[a]	---	---
11- 8-61	WF1S	2	45.8	43.8	45.0	44.4	-0.6	13.2	12.2	12.9	11.9	-1.0	128	80	109	106	-3	432	320	376	---	---	480	376	415[a]	---	---
11- 8-61	WF1S	1	44.2	42.8	43.8	43.7	-0.1	13.0	12.0	12.4	11.5	-0.9	125	87	111	111	0	400	296	342	---	---	480	352	410[a]	---	---
11- 9-61	WF1S	1	43.8	42.2	43.1	42.6	-0.5	12.6	11.9	12.2	11.1	-1.1	117	86	103	109	+6	432	288	349	---	---	432	352	381[a]	---	---
Current Mill Average:					43.9	43.6	-0.3			12.6	11.6	-1.0			106	109	+3			359					402		
Cumulative Mill Average:					43.4					12.7					105					360					401		
Mill Factor, %					101.2					99.2					101.0					99.7					100.2		
Mill Index, %					101.6					100.0					95.5					109.5					108.4		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XVIII

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL O

Date Made	Finish	Mch. No.	Basis Weight, lb.					Caliper, points					Bursting Strength, p.s.i. gage					Elmendorf Tear, g./sheet In Machine					Elmendorf Tear, g./sheet Cross Machine				
			Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill	
			Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.
October, 1961																										
9-11-61	----	1	44.4	42.0	42.9	43.2	+0.3	13.8	12.4	13.0	12.2	-0.8	122	81	106	108	+2	320	240	279	275	- 4	352	248	327[a]	338	+11
9-20-61	----	1	43.8	42.6	43.3	43.8	+0.5	14.2	12.9	13.5	13.0	-0.5	128	83	109	107	-2	360	264	310[a]	283	-27	360	312	335[a]	367	+32
10- 6-61	----	1	43.8	42.2	43.4	43.7	+0.3	14.2	12.5	13.2	12.6	-0.6	131	81	106	107	+1	384	256	337[a]	322	-15	416	344	377[a]	392	+15
10- 9-61	----	1	45.6	42.2	43.4	43.6	+0.2	14.0	12.1	13.0	12.4	-0.6	128	84	107	108	+1	448	320	364[a]	319	-45	400	352	370[a]	381	+11
Current Mill Average:					43.2	43.6	+0.4			13.2	12.6	-0.6			107	107	0			323	300	-23			352	369	+17
Cumulative Mill Average:					43.4					13.1					108					320					367		
Mill Factor, %					99.5					100.8					99.1					100.9					95.9		
Mill Index, %					99.8					104.8					96.4					97.9					94.6		
November, 1961																										
10-16-61	----	1	43.8	41.6	42.8	43.6	+0.8	13.2	12.0	12.6	12.2	-0.4	135	84	111	112	+1	392	240	314[a]	308	- 6	384	328	359[a]	373	+14
10-27-61	----	1	44.4	42.0	43.7	44.6	+0.9	14.0	12.0	13.1	12.7	-0.4	140	95	119	110	-9	368	240	309	293	-16	400	328	365[a]	365	0
11- 7-61	----	1	44.0	42.0	43.0	42.8	-0.2	13.7	12.1	12.9	12.3	-0.6	137	90	111	113	+2	416	288	328[a]	303	-25	400	328	367[a]	365	- 2
Current Mill Average:					43.2	43.6	+0.4			12.9	12.4	-0.5			114	112	-2			317	301	-16			364	368	+ 4
Cumulative Mill Average:					43.4					13.1					108					319					366		
Mill Factor, %					99.5					98.5					105.6					99.4					99.5		
Mill Index, %					100.0					102.4					102.7					96.6					98.1		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XIX

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL P

Date Made	Finish	Mch. No.	Basis Weight, lb.					Caliper, points					Bursting Strength, p.s.i. gage					Elmendorf Tear, g./sheet In Machine					Elmendorf Tear, g./sheet Cross Machine				
			Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill		Institute			Mill	
			Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.
October, 1961																										
No samples submitted.																										
November, 1961																										
No samples submitted.																										

TABLE XX

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL 1

Date Made	Finish	Mch. No.	Basis Weight, lb. Institute Max.	Min.	Av.	Mill Av.	Diff.	Caliper, points Institute Max.	Min.	Av.	Mill Av.	Diff.	Bursting Strength, p.s.i. gage Institute Max.	Min.	Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet In Machine Institute Max.	Min.	Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet Cross Machine Institute Max.	Min.	Av.	Mill Av.	Diff.
October, 1961																										
No samples submitted.																										
November, 1961																										
No samples submitted.																										

TABLE XXI

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL S

Date Made	Finish	Mch. No.	Basis Weight, lb.					Caliper, points					Bursting Strength, P.S.I. gage				Elmendorf Tear, g./sheet In Machine					Elmendorf Tear, g./sheet Cross Machine				
			Institute			Mill		Institute			Mill		Institute			Mill	Institute			Mill		Institute			Mill	
			Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av. Diff.	Max.	Min.	Av.	Av.	Diff.	Max.	Min.	Av.	Av.	Diff.
October, 1961																										
No samples submitted.																										
November, 1961																										
No samples submitted.																										

TABLE XXII

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL T

Date Made	Finish	Mch. No.	Basis Weight, lb. Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.	Caliper, points Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.	Bursting Strength, p.s.i. gage Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet In Machine Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet Cross Machine Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.
October, 1961																										
9-20-61	WF1S	1	43.8	42.2	43.0	43.0	0.0	13.8	12.4	13.0	12.8	-0.2	124	86	107	112	+5	336	280	308	335	+27	400	328	359[a]	417	+58
9-26-61	WF1S	1	43.6	42.0	42.5	43.2	-0.7	13.9	12.1	13.0	12.7	-0.3	129	94	111	109	-2	352	248	305[a]	350	+45	448	336	386[a]	426	+40
10- 3-61	WF1S	1	43.6	41.8	42.6	43.1	-0.5	13.7	12.1	12.9	12.6	-0.3	130	83	112	107	-5	392	288	323	345	+22	408	320	374[a]	420	+46
10-10-61	WF1S	1	44.0	42.2	43.0	42.7	-0.3	13.2	11.8	12.5	12.1	-0.4	131	99	119	112	-7	392	272	326	327	+ 1	400	336	367[a]	397	+30
10-19-61	WF1S	1	43.8	42.0	42.5	43.2	+0.7	12.9	11.9	12.4	12.4	0.0	128	86	112	112	0	360	224	297[a]	338	+41	456	344	388[a]	414	+26
Current Mill Average:					42.7	43.0	+0.3			12.8	12.5	-0.3			112	111	-1			312	339	+27			375	415	+40
Cumulative Mill Average:					43.0					12.7					111					319					386		
Mill Factor, %					99.3					100.8					100.9					97.8					97.2		
Mill Index, %					98.6					101.6					100.9					94.5					100.6		
November, 1961																										
10-28-61	WF1S	1	43.4	42.0	42.4	42.6	+0.2	12.9	11.9	12.4	12.3	-0.1	130	103	116	107	-9	400	288	331[a]	339	+ 8	432	344	377[a]	418	+41
11- 1-61	WF1S	1	43.4	41.8	42.4	42.8	+0.4	13.6	11.8	12.7	12.5	-0.2	140	100	121	115	-6	424	288	335[a]	277	-58	408	328	375[a]	347	-28
11- 9-61	WF1S	1	43.6	41.8	42.6	42.8	+0.2	13.0	11.8	12.2	12.3	+0.1	136	99	114	111	-3	432	232	322[a]	313	- 9	480	304	375[a]	383	+ 8
11-15-61	WF1S	1	44.0	42.2	43.0	43.3	+0.3	13.2	11.5	12.4	12.4	0.0	131	98	116	111	-5	352	272	316[a]	343	+27	464	368	396[a]	415	+19
Current Mill Average:					42.6	42.9	+0.3			12.4	12.4	0.0			117	111	-6			326	318	- 8			381	391	+10
Cumulative Mill Average:					42.9					12.7					111					317					383		
Mill Factor, %					99.3					97.6					105.4					102.8					99.5		
Mill Index, %					98.6					98.4					105.4					99.4					102.7		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

TABLE XXIII

SUMMARY OF INSTITUTE AND MILL DATA FOR MILL U

Date Made	Finish	Mch. No.	Basis Weight, lb. Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.	Caliper, points Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.	Bursting Strength, p.s.i. gage Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet In Machine Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.	Elmendorf Tear, g./sheet Cross Machine Institute Max.	Institute Min.	Institute Av.	Mill Av.	Diff.
October, 1961																										
9-19-61	W.F.	2	44.4	43.2	44.0	43.9	-0.1	13.0	12.1	12.7	12.3	-0.4	136	97	114	112	-2	352	304	328[a]	324	- 4	384	336	364[a]	402	+38
9-26-61	W.F.	2	42.8	41.6	42.4	42.3	-0.1	12.0	11.2	11.6	11.5	-0.1	131	96	110	111	+1	312	248	283	286	+ 3	368	312	337[a]	360	+23
10- 6-61	W.F.	2	44.4	43.8	44.1	43.9	-0.2	13.2	12.3	12.9	12.6	-0.3	135	88	113	111	-2	360	288	327[a]	336	+ 9	400	320	366[a]	408	+42
10-12-61	W.F.	2	44.2	42.6	43.6	43.7	+0.1	13.8	12.4	13.2	12.8	-0.4	128	81	107	109	+2	368	288	340[a]	355	+15	416	352	385[a]	437	+52
Current Mill Average:					43.5	43.4	-0.1			12.6	12.3	-0.3			111	111	0			320	325	+ 5			363	402	+39
Cumulative Mill Average:					43.6					12.5					113					321					381		
Mill Factor, %					99.8					100.8					98.2					99.7					95.3		
Mill Index, %					100.5					100.0					100.0					97.0					97.6		
November, 1961																										
10-17-61	W.F.	2	44.0	42.0	43.7	44.2	+0.5	12.9	11.8	12.2	11.9	-0.3	130	102	117	111	-6	384	256	332[a]	335	+ 3	440	352	397[a]	404	+ 7
11- 2-61	W.F.	2	43.8	42.2	42.8	42.8	0.0	12.4	11.6	12.0	12.0	0.0	145	100	125	124	-1	408	296	342[a]	331	-11	416	352	380[a]	407	+27
11- 6-61	W.F.	2	44.0	42.4	43.5	43.4	-0.1	12.6	12.0	12.2	12.1	-0.1	155	103	125	121	-4	368	288	331	339	+ 8	432	352	387[a]	429	+42
11-10-61	W.F.	2	44.0	42.6	43.1	43.4	+0.3	13.1	12.2	12.5	12.3	-0.2	132	89	114	109	-5	384	256	335	330	- 5	456	344	406[a]	407	+ 1
Current Mill Average:					43.3	43.5	+0.2			12.2	12.1	-0.1			120	116	-4			335	334	- 1			392	412	+20
Cumulative Mill Average:					43.6					12.5					113					321					380		
Mill Factor, %					99.3					97.6					106.2					104.4					103.2		
Mill Index, %					100.2					96.8					108.1					102.1					105.7		

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

(2) a current mill average (calculated at the Institute) that represents the averages obtained on the individual sample lots of linerboard evaluated at the mills during a given month. In addition to the presentations of Institute and mill data described above, Tables IV through XXIII also include under each test heading a column labeled "Diff." This column shows the differences between averages obtained at the Institute and those obtained at the mills. The data obtained at the Institute are used as the reference in calculating these differences.

The average test results obtained at the Institute and at the mills are summarized in Tables XXIV and XXV for the months of October and November, respectively. Shown in these tables for each mill is the difference for each test between the current mill average based on Institute data and the current mill average based on mill data. In addition, for each test the maximum difference encountered in comparing Institute and mill averages for individual sample lots is shown. In Table XXVI, the differences for each test between the current mill averages based on Institute data and those based on mill data shown in Tables XXIV and XXV for the months of October and November have been converted to per cent (based on Institute data as a reference). In addition, for purposes of comparison, the percentage differences from the previous bimonthly report are shown.

A summary of the agreement obtained in the comparisons of Institute and mill test data for the months of October and November is shown in Table XXVII. This summary is based on the results given in Table XXVI. The tabulated data show the number of mills, and the percentage of all mills which this number represents, whose average test results for the

TABLE XXIV

SUMMARY OF TEST RESULT COMPARISONS (Average Mill and Institute Results) FOR OCTOBER, 1961

Mills[a]	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	S	T	U
No. of Samples Compared	4	4	4	12	3	6	3	2	8	8	2	4	2	7	4	0	0	0	5	4
Basis Weight																				
Institute	42.3	42.4	42.6	42.9	42.8	43.2	43.3	42.8	42.0	42.8	43.2	42.4	42.3	43.7	43.2				42.7	43.5
Mill	42.5	42.8	42.1	43.4	42.9	43.1	43.0	43.3	42.0	42.8	43.4	42.9	42.6	43.6	43.6				43.0	43.4
Av. Diff.[b]	+0.2	+0.4	-0.5	+0.5	+0.1	-0.1	+0.6	+0.5	0.0	0.0	+0.2	+0.5	+0.3	-0.1	+0.4				+0.3	-0.1
Max. Diff.[c]	+0.9	+0.7	-1.4	+1.0	+0.3	-0.7	+0.9	+0.7	±0.2	+0.8	+0.3	+0.8	+0.4	-0.2	+0.5				+0.7	-0.2
Caliper																				
Institute	12.9	12.3	12.2	12.2	13.1	12.1	13.8	12.3	12.3	13.2	12.9	13.1	12.8	12.8	13.2				12.8	12.6
Mill	12.6	12.0	11.8	12.3	12.5	11.9	13.5	12.3	12.1	12.7	12.3	12.8	12.4	12.1	12.6				12.5	12.3
Av. Diff.[b]	-0.3	-0.3	-0.4	+0.1	-0.6	-0.2	-0.3	0.0	-0.2	-0.5	-0.6	-0.3	-0.4	-0.7	-0.6				-0.3	-0.3
Max. Diff.[c]	-0.8	-0.4	-0.5	+0.3	-0.7	-0.6	-0.4	+0.1	-1.0	-0.8	-0.6	-0.4	-0.6	-0.8	-0.8				-0.4	-0.4
Bursting Strength																				
Institute	112	121	110	112	110	115	106	112	114	113	116	111	120	105	107				112	111
Mill	109	117	108	111	112	113	109	106	115	110	109	107	124	103	107				111	111
Av. Diff.[b]	-3	-4	-2	-1	+2	-2	+3	-6	+1	-3	-7	-4	+4	-2	0				-1	0
Max. Diff.[c]	-4	-5	-7	-4	+2	-7	+5	-6	+7	-7	-8	-8	+4	+7	±2				-7	±2
Tearing Strength, in																				
Institute	308	316	362	296	306	305	364	341	279	348	383	323	255	370	323				312	320
Mill	313	312	339	302	281	320	349	332	247	352	403	351	271	--	300				339	325
Av. Diff.[b]	+5	-4	-23	+6	-25	+15	-15	-9	-32	+4	+20	+28	+16	--	-23				+27	+5
Max. Diff.[c]	+13	-29	-31	-37	-28	+38	-23	-13	-39	-29	+34	+42	+31	--	-45				+45	+15
Tearing Strength, across																				
Institute	336	348	401	357	370	352	410	376	330	380	421	378	326	401	352				375	363
Mill	366	352	393	372	358	382	415	374	331	416	422	396	338	--	369				415	402
Av. Diff.[b]	+30	+4	-8	+15	-12	+30	+5	-2	+1	+36	+1	+18	+12	--	+17				+40	+39
Max. Diff.[c]	+40	+11	-38	+37	-18	+53	+15	-3	+10	+79	+20	+36	+26	--	+32				+58	+52

[a] Comparison based on averages involved only those samples on which mill test data were submitted.
[b] Average difference is the difference between the Institute mill average and the mill average based on mill test data.
[c] Maximum difference encountered in comparing the Institue average and the mill averages for any sample submitted by that particular mill.

TABLE XXV

SUMMARY OF TEST RESULT COMPARISONS (Average Mill and Institute Results) FOR NOVEMBER, 1961

Mills[a]	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	S	T	U
No. of Samples Compared	5	4	3	4	3	4	0	4	4	6	0	2	3	4	3	0	0	0	4	4
Basis Weight																				
Institute	42.1	42.6	42.7	43.3	43.8	43.3		42.5	41.8	42.5		42.9	42.4	43.9	43.2				42.6	43.3
Mill	42.7	43.1	42.0	43.4	43.7	43.6		42.9	42.0	42.4		43.1	42.5	43.6	43.6				42.9	43.5
Av. Diff.[b]	+0.6	+0.5	-0.7	+0.1	-0.1	+0.3		+0.4	+0.2	-0.1		+0.2	+0.1	-0.3	+0.4				+0.3	+0.2
Max. Diff.[c]	+0.8	+0.9	-0.7	+0.6	+0.6	+0.4		+1.5	+0.4	-0.7		+0.5	+0.4	-0.6	+0.9				+0.4	+0.5
Caliper																				
Institute	13.1	12.7	12.1	12.8	12.6	12.2		12.1	12.2	13.2		13.4	13.2	12.6	12.9				12.4	12.2
Mill	12.9	12.2	11.6	12.6	12.4	12.0		12.0	12.1	12.8		12.9	12.8	11.6	12.4				12.4	12.1
Av. Diff.[b]	-0.2	-0.5	-0.5	-0.2	-0.2	-0.2		-0.1	-0.1	-0.4		-0.5	-0.4	-1.0	-0.5				0.0	-0.1
Max. Diff.[c]	-0.3	-0.6	-0.6	-0.2	-0.3	-0.5		-0.6	-0.2	-1.1		-0.6	-0.5	-1.1	-0.6				-0.2	-0.3
Bursting Strength																				
Institute	114	122	110	107	116	115		114	117	109		112	115	106	114				117	120
Mill	114	116	107	110	114	113		110	112	105		107	116	109	112				111	116
Av. Diff.[b]	0	-6	-3	+3	-2	-2		-4	-5	-4		-5	+1	+3	-2				-6	-4
Max. Diff.[c]	-5	-10	-3	+8	-4	-3		-8	-7	-11		-7	+4	+6	-9				-9	-6
Tearing Strength, in																				
Institute	302	311	376	312	305	323		338	290	324		347	299	359	317				326	335
Mill	306	300	340	318	288	330		316	252	327		353	260	--	301				318	334
Av. Diff.[b]	+4	-11	-36	+6	-17	+7		-22	-38	+3		+6	-39	--	-16				-8	-1
Max. Diff.[c]	+25	-19	-68	+16	-34	+31		-27	-48	+21		+31	-50	--	-25				-58	-11
Tearing Strength, across																				
Institute	341	352	394	368	351	348		356	331	385		389	343	402	364				381	392
Mill	370	344	380	384	371	373		358	334	407		399	358	--	368				391	412
Av. Diff.[b]	+29	-8	-14	+16	+20	+25		+2	+3	+22		+10	+15	--	+4				+10	+20
Max. Diff.[c]	+59	-29	-27	+29	+36	+30		+22	+11	+39		+10	+22	--	+14				+41	+42

[a] Comparison based on averages involved only those samples on which mill test data were submitted.
[b] Average difference is the difference between the Institute mill average and the mill average based on mill test data.
[c] Maximum difference encountered in comparing the Institute average and the mill averages for any sample submitted by that particular mill.

TABLE XXVI

COMPARISON OF INSTITUTE-MILL DIFFERENCES FOR AUGUST THROUGH NOVEMBER, 1961
(Average Difference, per cent)

Mill	Period	Basis Weight	Caliper	Bursting Strength	Tear, in	Tear, across	Mill	Period	Basis Weight	Caliper	Bursting Strength	Tear, in	Tear, across
A	August	+1	-2	-0.9	-0.3	+9	K	August	-0.2	-2	-0.9	+3	+3
	September	+2	-2	-4	-4	+5		September	-0.2	-2	-4	+6	0
	October	+0.5	-2	-3	+2	+9		October	+0.5	-5	-6	+5	+0.2
	November	+1	-2	0	+1	+9		November	--	--	--	--	--
B	August	+0.7	-3	0	-9	-8	L	August	-0.5	-3	-4	+5	+6
	September	+1	-2	-3	-10	-5		September	+1	-4	-8	+14	+12
	October	+0.9	-2	-3	-1	+1		October	+1	-2	-4	+9	+5
	November	+1	-4	-5	-4	-2		November	+0.5	-4	-4	+2	+3
C	August	-0.9	-2	-2	-6	-2	M	August	+2	0	+7	+7	+19
	September	-0.7	-2	-3	-5	+2		September	+0.9	-0.7	+4	+4	+5
	October	-1	-3	-2	-6	-2		October	+0.7	-3	+3	+6	+4
	November	-2	-4	-3	-10	-4		November	+0.2	-3	+0.9	-13	+4
D	August	+0.7	-0.8	0	+6	+11	N	August	-0.7	-4	+2	--	--
	September	+2	+2	-3	+11	+17		September	+1	-4	0	--	--
	October	+1	+0.8	-0.9	+2	+4		October	-0.2	-5	-2	--	--
	November	+0.2	-2	+3	+2	+4		November	-0.7	-8	+3	--	--
E	August	-0.2	-5	-2	-6	+1	O	August	0	-4	-0.9	-7	+1
	September	+0.5	-5	-3	-8	-3		September	+0.5	-4	-1	-10	+3
	October	+0.2	-5	+2	-8	-3		October	+0.9	-5	0	-7	+5
	November	-0.2	-2	-2	-6	+6		November	+0.9	-4	-2	-5	+1
F	August	+0.9	-0.8	-0.9	+5	+5	P	August	--	--	--	--	--
	September	+0.9	+2	-2	+0.6	+9		September	--	--	--	--	--
	October	-0.2	-2	-2	+5	+9		October	--	--	--	--	--
	November	+0.7	-2	-2	+2	+7		November	--	--	--	--	--
G	August	+0.2	-3	0	-1	+2	Q	August	--	--	--	--	--
	September	+0.5	-3	-2	-2	+0.5		September	--	--	--	--	--
	October	+1	-2	+3	-4	+1		October	--	--	--	--	--
	November	--	--	--	--	--		November	--	--	--	--	--
H	August	+0.5	0	-4	-5	+0.6	S	August	+0.7	+0.9	+0.9	-2	+2
	September	+0.2	0	-9	-4	-0.6		September	--	--	--	--	--
	October	+1	0	-5	-3	-0.5		October	--	--	--	--	--
	November	+0.9	-0.8	-4	-7	+0.6		November	--	--	--	--	--
I	August	-0.2	-2	+0.9	-14	-1	T	August	--	--	--	--	--
	September	--	--	--	--	--		September	0	0	-7	+10	+16
	October	0	-2	+0.9	-11	+0.3		October	+0.7	-2	-0.9	+9	+11
	November	+0.5	-0.8	-4	-13	+0.9		November	+0.7	0	-5	-2	+3
J	August	+0.7	-2	-2	+6	+9	U	August	-1	-3	-0.9	+2	+5
	September	+0.2	-3	-3	+0.9	+8		September	+0.7	-2	-6	+0.9	+6
	October	0	-4	-3	+1	+9		October	-0.2	-2	0	+2	+11
	November	-0.2	-3	-4	+0.9	+6		November	+0.5	-0.8	-3	-0.3	+5

TABLE XXVII

SUMMARY OF AGREEMENT BETWEEN INSTITUTE AND MILL RESULTS

	Average Percentage Difference Between Institute and Mill Test Results								
	±0.5	±1	±2	±3	±4	±5	±7.5	±10	±13
October									
Basis weight									
Number of mills	8	17							
Percentage of all mills	47.1	100.0							
Caliper									
Number of mills	1	2	10	12	13	17			
Percentage of all mills	5.9	11.8	58.8	70.6	76.5	100.0			
Bursting strength									
Number of mills	2	5	9	14	15	16	17		
Percentage of all mills	11.8	29.4	52.9	82.4	88.2	94.1	100.0		
Tearing strength, in									
Number of mills	0	2	5	6	7	9	12	15	16
Percentage of all mills	0.0	12.5	31.2	37.5	43.8	56.2	75.0	93.8	100.0
Tearing strength, across									
Number of mills	3	5	6	7	9	11	11	14	16
Percentage of all mills	18.8	31.2	37.5	43.8	56.2	68.8	68.8	87.5	100.0
November									
Basis weight									
Number of mills	7	14	15						
Percentage of all mills	46.7	93.3	100.0						
Caliper									
Number of mills	1	4	8	10	14	14	14	15	
Percentage of all mills	6.7	26.7	53.3	66.7	93.3	93.3	93.3	100.0	
Bursting strength									
Number of mills	1	2	5	9	13	15			
Percentage of all mills	6.7	13.3	33.3	60.0	86.7	100.0			
Tearing strength, in									
Number of mills	1	3	7	7	8	9	11	12	14
Percentage of all mills	7.1	21.4	50.0	50.0	57.1	64.3	78.6	85.7	100.0
Tearing strength, across									
Number of mills	0	3	4	6	9	10	13	14	
Percentage of all mills	0.0	21.4	28.6	42.9	64.3	71.4	92.9	100.0	

months of October and November fall within designated percentages from the average test results obtained at the Institute. It may be noted from this summary that agreement between the results obtained at the Institute and those obtained at the mills was generally very good.

Preconditioning and conditioning data pertinent to the test results obtained at the mills during October and November are given in Table XXVIII.

TABLE XXVIII

PRECONDITIONING AND CONDITIONING DATA FOR MILL TESTS

	Preconditioning			Conditioning		
Mill Code	Relative Humidity, %	Temperature, °F.	Time, hr.	Relative Humidity, %	Temperature, °F.	Time, hr.
			October			
A	50	72	24	No conditioning		
B	34-38	72-78	8	48-52	72	16
C	No preconditioning			48-53	72-73	48
D	35	73	24	50	73	48
E	43-62	84-87	0.5	50	73	24
F	No preconditioning			50	73	24
G	No preconditioning			50	73	24
H	No preconditioning			50	73	24
I	No preconditioning			40-75	70-89	--
J	50	72	120	50	70-72	120-168
K	50	73-74	48	50	73	--
L	50	70-72	24	No conditioning		
M	40-50	73	72-120	40-50	73	72-120
N	No preconditioning			50	72-73	24
O	50	72-73	48	50	72-73	3
P	No samples submitted.					
Q	No samples submitted.					
S	No samples submitted.					
T	No preconditioning			55-56	70-72	--
U	50	73	24	50	73	24

(Continued on the following page.)

TABLE XXVIII (Continued)

PRECONDITIONING AND CONDITIONING DATA FOR MILL TESTS

Mill Code	Preconditioning Relative Humidity, %	Preconditioning Temperature, °F.	Preconditioning Time, hr.	Conditioning Relative Humidity, %	Conditioning Temperature, °F.	Conditioning Time, hr.
			November			
A	50	72	24	No conditioning		
B	34-35	78	8	48-52	72	16
C	No preconditioning			48-49	73-74	48
D	35	73	24	50	73	48
E	38-62	71-79	0.5	50	72-73	24
F	No preconditioning			50	73	24
G	No samples submitted.					
H	No preconditioning			50	73	24
I	No preconditioning			45-50	70-85	--
J	50	70	120	50	70-72	120-168
K	No samples submitted.					
L	50	72	--	No conditioning		
M	50	73	48-96	50	72-73	48-96
N	No preconditioning			50	73	24-48
O	50	73	48	50	73	3
P	No samples submitted.					
Q	No samples submitted.					
S	No samples submitted.					
T	No preconditioning			55-57	71-72	--
U	50	73	24	50	73	24

THE INSTITUTE OF PAPER CHEMISTRY

W. N. Hubert, Jr.

W. N. Hubert, Research Aide
Container Section

R. C. McKee /J.S.

R. C. McKee, Chief, Container Section